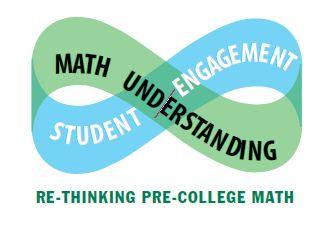
**Re-Thinking Pre-College Math Project**

**Year One Project Summary – August 31, 2010**

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| **Northwest Indian College - Activities in Phase I** | |
| Describe what your team will have accomplished toward the overall goals of your project? | * The FIG met using Interactive Video Conferencing (ITV) almost every Friday during spring quarter to discuss grant activities. * The FIG created an internet discussion board (<http://blogs.nwic.edu/mathtest/>) in which site based faculty could engage in meaningful dialogue, post information, and share ideas with one another. One blog discussion thread was whether or not all math classes at NWIC campus-wide should use the same textbook for math 98 and 99. This resulted in an informative and productive conversation between main campus and site-based faculty. * Two quizzes and a final exam for Math 98 (intermediate algebra) posted on blog * Several student focus group interviews for pre-college math courses, student interviews, class discussions, classroom observations, and the “muddiest point” assessment technique were administered. * In June 2010, NWIC hosted its first Teaching and Learning Institute for more than 30 faculty and staff. Day one was devoted to developmental education programming and college readiness, facilitated by Gillies Malnarich. Malnarich facilitated a group meeting with FIG members and discussed the following topics: 1 report on spring quarter assignments; 2 accessing electronic resources (Wiki); 3 potential summer/fall activities/tasks; 4 fall institute; and ideas re: grant-related activities at fall pre-service. * The FIG read and discussed the article, “How Students Learn” by M. Suzanne Donovan and John D. Bransford, which is one of the assignments for the fall convening. |
| How are you incorporating the practice of classroom observations/exchanges and classroom assessments into your project? | * Teaching and learning will be made visible by articulating/revising course outcomes for the pre-college math sequence – Math 70, 98 and 99. * We will also analyze the relationship of course learning outcomes to student assessment tools to ensure that the latter accurately addresses the former. * We will incorporate culturally responsive practices and materials into the curriculum. Elese Washines, a Native high school math teacher for the Yakama Nation, will participate in the fall faculty pre-service. She will present on strategies for teaching mathematics to Native students, emphasizing culturally responsive teaching practices and cultural integration strategies for the classroom. She will focus on word problems, linear equations, coordinate plane, and using graphic organizers as an effective teaching tool. * The FIG will continue to build on recently developed relationships with math faculty from Diné College (Navajo Nation tribal college) to discuss culturally-based developmental math models they use. * Our students bring significant cultural knowledge of their tribal environments and traditional practices into the classroom. By tapping into this prior learning knowledge, teaching and learning are made visible in a formal academic context by creating learning activities and exercises that require students to draw upon what they already know to create a meaningful learning experience. * FIG is considering holding a session with experts on the Lummi (or other) indigenous language on their numbering system. Further discussions are planned. * An instructional technique that will be explored is knowing what questions to ask students in order to accurately discern what they do not understand. |
| How are you including structured faculty inquiry in your project? | * Some key questions and topics that the FIG will investigate this year will be the following: * Math-based pedagogy. * Exploring online assessment tools. * Math and science faculty discussion. |
| How are you addressing the area of targeting interventions to “improve student engagement” and “deepen mathematical understanding” in the work you are pursuing? | * In an effort to improve student engagement, FIG members will assess the testing tools and course outcomes for Math 98. This diagnostic activity will identify the elements that generate the greatest success among students. * Interventions we use that will both improve student engagement and deepen mathematical understanding 1) incorporate culturally responsive practices and materials into the curriculum; 2) learn from math faculty at other tribal colleges; 3) incorporate and use approaches that promote active learning and prior knowledge into coursework; and 4) bring Native languages into the classroom. * Current plans are underway to hire a Tutoring Center Coordinator with a strong math background to provide student support. |
| **Northwest Indian College - Challenges & Obstacles** | |
| What challenges/obstacles have you encountered so far in organizing your team and the work of your project, and how are you addressing them? | * Coordinating / scheduling weekly meetings with faculty at the five extended campuses plus the main campus were challenging. Creating the blog helped facilitate group dialogue in lieu of ITV meetings. * Pre-college math course enrollment was higher than normal. Additional part-time math faculty has been hired for fall quarter 2010 to alleviate this challenge. * Inconsistency and/or turnover during spring quarter prevented tutors from participating in the project activities to the extent planned. Efforts are underway to obtain an adequate pool of tutors. * The Tutoring Center Coordinator position became vacant at the end of the school year, with a replacement expected to be hired before fall quarter. The position is being advertised, with a replacement expected to be hired before fall quarter. * The low level of grant expenditures highlights the fact that it took longer than expected to convene all stakeholders’ and execute grant activities. We must be more intentional and creative in spending grant funds. |
| What challenges do you anticipate in the core themes/practices and how can the RPM project leadership help you address those challenges? | * One challenge that may arise is that part-time faculty, especially at extended campuses, often do not communicate with main campus faculty or with other site-based faculty and may not teach to the same course outcomes as permanent faculty. One of our key goals is to create more opportunities for communication, including developing an instructional packet for faculty to use as a guide. * Challenges may arise for faculty who are unfamiliar with culturally-based pedagogies. We will address this by providing essential professional development opportunities. * We would welcome any suggestions or ideas from the RPM project leadership team on these two particular challenges. |
| **Northwest Indian College - Communication** | |
| What kind of web based resources would be most helpful to you and your team, and how will you create opportunities or structures to access and utilize the resources you need? | * Creating the blog site has provided access to resources campus wide. * Another way we can expand access to available resources is by posting articles, materials, etc. on our new teaching and learning web page on our college website. * We may consider creating our own subsection of math related materials within the teaching and learning web page as a repository. |
| What connections have you made with other RPM grant sites either at any of the RPM events or at other times to share resources, raise questions, compare ideas, etc.? What suggestions do you have for us to help foster this kind of cross-team collaboration? | * The most significant connection made thus far has been with Highline Community College. One of their staff members conducted an interview with John Frey to gather research data for the grant. * We believe that the grant staff has done a great job in terms of providing adequate resources and opportunities to foster cross-team collaboration. * More time together at the grant sponsored Institute convening’s will facilitate further opportunities to interact with and team build with other RPM grant sites. |

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| **Lower Columbia College - Activities in Phase I** | |
| Describe what your team will have accomplished toward the overall goals of your project? | *Curriculum*   * We have reviewed our 4 course sequence, identified 16 topic areas, divided the material into 3 clearly defined 5-credit courses, wrote new course plans, and had them approved by our curriculum committee. We used the modules to redefine prerequisites for other courses with a math requirement and identify math graduation requirements for all degrees and certificates. * All project faculties played a role in curriculum development. Changes in curriculum impacted other college departments, certificates, and degree programs. To ensure stakeholders were informed and involved, we met with and provided information to entry advisors, student advisors, all department chairs, and deans.   *Textbooks*   * We collaborated with Pearson Publishing to create a custom textbook in three volumes, to be used by all teaching pre-college math courses. This new textbook will cost our students significantly less than the four textbooks we had been using. We are adopting Pearson’s MyMathLab (MML), a robust and interactive online learning tool. MML provides students with an eBook, online video clips, homework with instant feedback, and step-by-step   *Instructions*   * Students need only purchase a license once for their entire precollege math sequence.   *Math Achievement Center (MAC)*   * A team of three is revising our current lab into a more student-centered, active learning environment. Development of assessments for the first-in-sequence course, Math 079, will be completed by August 23. The MAC will also host a series of just in time (JIT) workshops throughout the quarter. A list of workshop topics and presenters has been identified and covers both skills and the attributes of successful students.   *Placement*   * A schema has been designed using MyMathTest (MMT). Key topics from our curriculum were identified and will be used to place students. * One unplanned benefit is that the assessment instrument is more comprehensive than the COMPASS test, and will provide for placement up through Calc I. * The use of MMT is free for the college as well as the students, a result of our negotiations with Pearson.   *Faculty Inquiry Groups (FIGs)*   * Faculty that is teaching one of the new pre-college courses has been assigned to a FIG, agendas have been developed, and dates have been tentatively set for meetings. FIGs will convene at least twice a quarter to debrief their experiences, discuss the new curriculum, assessment of learning, and other emerging issues. The FIGs will be responsible for the creation of a common final used to assess both our students and instruction. |
| How are you incorporating the practice of classroom observations or exchanges and classroom assessments into your project? | * Our FIGS will be a venue for disseminating successes developed at other colleges. * We also want to facilitate exchanges and assessments within our own team; we look forward to sharing the results of Highline’s research. * One major challenge for classroom exchanges across the project colleges will be time and distance. While we may be able to arrange for substitutes, it will be problematic for some of us to travel to other colleges to visit classrooms while still teaching our own courses. |
| How are you including structured faculty inquiry in your project? | * Encourage conversations between faculty who are teaching the same courses regarding classroom activities, instruction, assessment, discipline, etc. * We have created a list of expectations and guidelines for all those teaching our new pre-college courses, and we have created the Faculty Inquiry Groups, (FIGs); these provide for a structured, facilitated, and sustainable inquiry and assessment of program, curriculum, and student success. * The FIGs will meet at least twice a quarter. * The math department is scheduled to complete a course review during the 2010-11 academic year. |
| How are you addressing the area of targeting interventions to “improve student engagement” and “deepen mathematical understanding” in the work you are pursuing? |  |
| **Lower Columbia College - Challenges & Obstacles** | |
| What challenges or obstacles have you encountered so far in organizing your team and the work of your project, and how are you addressing them? | * Once people were given time to air their concerns or issues and revisions were made to the plan based on constructive criticism. * Another challenge has been to ensure all our advisors, testing/placement staff, administrators, and non-math faculty are fully aware of the changes we are implementing. We have sent all campus emails, talked with lead faculty, and arranged meetings with key personnel. * There are challenges operationally in the concept of one credit modules. Registration and financial aid staff have been very helpful in identifying obstacles, and have provided alternative approaches. |
| What challenges do you anticipate in the core themes or practices and how can the RPM project leadership help you address those challenges? | * One major challenge for classroom exchanges across the project colleges will be time and distance. * Perhaps the RPM leadership could provide workshops or other resources to help instructors develop speedier ways to assess student work. * Assistance in ensuring continued dedication and commitment of all faculty. This could be in the form of motivational, evangelizing on-site workshops with the faculty. * Possibly offer advanced training for instructional deans to facilitate the transformational change within faculty culture, and in the student support / student services area. |
| **Lower Columbia College - Communication** | |
| What kind of web based resources would be most helpful to you and your team, and how will you create opportunities or structures to access and utilize the resources you need? | * If partner colleges share their concrete deliverables in electronic form, that would be helpful for us. * To ensure that the resources provided on the TMP wiki are shared with our faculty we have selected a point person to review and summarize salient points with our faculty. * Web-based resources that will be most useful to us and the team include suggestions on creating successful FIGs, suggestions on how to create facilitated discussions, setting criteria and norms for discussions and meetings, and connections to current best practices. * Most of the pre-college curriculum available on the web is for the K-12 population. We would appreciate sharing lesson plans and activities appropriate for adult learners. |
| What connections have you made with other RPM grant sites either at any of the RPM events or at other times to share resources, raise questions, compare ideas, etc.? What suggestions do you have for us to help foster this kind of cross-team collaboration? | * We visited Shoreline CC for a presentation by Pearson and Tennessee Faculty in May 2010. * Ongoing communication with Everett CC via email regarding our modular plan. * Visited Centralia CC to discuss a modular approach, May 2010. * Ongoing collaboration with ESD 112 Math/Science Coordinator, Sue Bluestein. * One suggestion would be to arrange for Bill and Uri to present to our faculty again, possibly in conjunction with a nearby campus such as Clark or Centralia. To reach the greatest possible audience within our faculty, it would be desirable to have the presentation on our campus. * Provide unstructured time during institutes/retreats for project teams to connect and brainstorm. * Continue having Gillies and Emily visit project sites to discuss challenges, strategies, and opportunities. |

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| **Everett Community College - Activities in Phase I** | |
| Describe what your team will have accomplished toward the overall goals of your project? | * The ACE Taskforce met throughout spring quarter developing a two-quarter algebra sequence (beg-algebra through intermediate algebra) to replace the current Math 90 to Math 99. * Outside of meetings, faculty performed R&D on this new curriculum and is on-track to be implemented starting winter 2011. * The PDF Taskforce met together and also met with the other taskforces throughout the spring quarter. This taskforce has developed a strategy that includes support for faculty inquiry and professional development activities designed to support the work of the other taskforces. * The High School Taskforce helped facilitate the testing of local high schools as part of the Snomath Consortium. The High School Taskforce also organized and hosted the “Multiply Your Options” high school math teacher conference at EvCC. During the summer quarter, and also developed and piloted a math boot camp using ALEKS software. * The Alt Taskforce met and began detailing an alternative intermediate algebra course for non-STEM students and is planning to implement the course during either winter or spring 2011. * The MOLE Taskforce met during the spring and summer quarters. Members of this taskforce visited Shoreline CC to watch a presentation on Jackson State’s modular curriculum. |
| How are you incorporating the practice of classroom observations or exchanges and classroom assessments into your project? | * A specific schedule has not been developed for such observations/exchanges as of yet, but an agreement has been made to begin in the fall. The PDF Taskforce will take a lead role in facilitating these observations and exchanges. * Also, our team has worked with Tom Drummond from North Seattle CC to develop a creative method of observing student work in the classroom. This method allows instructors to view student thinking and conversation as they develop mathematical reasoning during a collaborative activity. |
| How are you including structured faculty inquiry in your project? | * The PDF Taskforce has met with the other taskforces and has developed a strategy for supporting such inquiry efforts as the taskforces move forward with their projects. * The organization of a powerful inquiry effort will require the assistance of others within the RPM network as we attempt a deeper level of faculty inquiry than we have had in the past. |
| How are you addressing the area of targeting interventions to “improve student engagement” and “deepen mathematical understanding” in the work you are pursuing? | * The core goals of the ACE and Alt Taskforces are to develop a curriculum that will deepen our students’ mathematical understanding while improving student engagement. * The Alt Taskforce will attempt to improve student engagement through an application-based intermediate algebra curriculum. This curriculum hopes to deepen student understanding through time consuming project-based assessments. * The ACE Taskforce is attempting to improve student engagement by eliminating the repetition of specific concepts throughout our algebra curriculum. |
| **Everett Community College - Challenges & Obstacles** | |
| What challenges or obstacles have you encountered so far in organizing your team and the work of your project, and how are you addressing them? | * The biggest challenge to the work being done by the taskforces will be the implementation of the new algebra curriculum being developed. A department-wide discussion regarding advising and program sequencing was held at the end of the spring quarter, but this meeting did not end with a consensus decision on how to move forward with the new curriculum. * As the taskforces move forward with their work, it has become obvious that the most difficult steps along the way will be the negotiation of the connections between the work being done independently in the taskforces. * The PDF taskforce, a model of open communication, and help from others within the RPM network will help ease this transition as we prepare to implement new curriculum and a workable course sequence during phase II of the RPM grant. During our annual department retreat in September, a large portion of the time will be dedicated to the RPM issues described above. * Also, developing a habit of faculty inquiry has been difficult to establish in the department while many faculty are putting in long hours in RPM-related research and meetings. |
| What challenges do you anticipate in the core themes or practices and how can the RPM project leadership help you address those challenges? |  |
| **Everett Community College - Communication** | |
| What kind of web based resources would be most helpful to you and your team, and how will you create opportunities or structures to access and utilize the resources you need? | * The organization of research and local data in a central location would the most helpful to our team as we move forward with our projects. * The information on the wiki and the TMP site are very useful, but could be better organized to meet the specific needs of the colleges * As the project grows, we believe that the wiki site will become an essential form of communication between the participating community colleges. |
| What connections have you made with other RPM grant sites either at any of the RPM events or at other times to share resources, raise questions, compare ideas, etc.? What suggestions do you have for us to help foster this kind of cross-team collaboration? | * Our MOLE Taskforce has made connections with Lower Columbia CC in order to share research and experiences in implementing a modular curriculum. The MOLE Taskforce has also met with Shoreline CC (non-RPM) during this process. * Through the Snomath Consortium, EvCC has had the chance to communicate important placement issues with Cascadia and Edmonds CC. * Highline CC faculty collaborated with EvCC by presenting at our “Multiply Your Options” high school conference. Our Alt Taskforce has contacted Tacoma CC regarding their Alternative Intermediate Algebra course and their pre-college course sequencing. * Using online resources to help different grant sites communicate should continue during the next phase of the grant. * Regular topic-based Elluminate meetings with core team members from the different grant sites, along with specific assignments for the wiki page may help foster collaboration between campuses. |

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| **North Seattle Community College - Activities in Phase I** | |
| Describe what your team will have accomplished toward the overall goals of your project? | *Course Scheduling*:   * Our pilot year-long student cohort called “ALIGN for Success” is on track and ready to begin fall quarter. * The first quarter class tying Beg Algebra I with a Study Skills class is published in our class schedule and has healthy enrollment. The coordinating faculty is in conversation to ensure that students get the most out of this coordinated class. * The second quarter class tying Beg Algebra II with a Supplemental Instruction class has been added to the schedule. The faculty involved has been in frequent conversation about how to structure and coordinate their instruction. * Spring quarter culminates with a coordinated studies course integrating Intermediate Algebra with Environmental Science. The class has been approved by our coordinated studies committee, and the layout and primary activities for the program have been created.   *Assessment work:*   * Full and part-time math faculty met for a retreat early in the summer. Groups were formed to write common first-day assessments. A common form to correlate a student’s previous math experience with their first-day assessment score has been created and will be used starting fall quarter.   *Learning Resource Bank:*   * A second objective is to produce a learning resource bank for pre-college math classes. This will consist of activities that are contextually-based with sustainability as an overall theme. To accomplish this, a team from Biology, Chemistry, Engineering, Psychology, and Nutrition attended a retreat in July. For the first half of the retreat, groups of math faculty sat with groups of sciences faculty to explore what discipline-specific topics might fit into the resource bank activities.   *Professional Development:*   * The second half of the July retreat provided a professional development opportunity for math faculty to focus on formative assessment techniques. Emily Larder and Gillies Malnarich led the conversation, answering many assessment questions and clarifying areas of confusion about the differences between summative and formative assessment. |
| How are you incorporating the practice of classroom observations or exchanges and classroom assessments into your project? | * Faculty teaching pre-college math have committed to incorporating formative assessments in their classes starting in fall. * At our summer retreat, a number of science faculty expressed interest in observing or being a guest in math classes when their learning resource bank data will be used. This wonderful idea will help give the students a tangible link between math and science. Science faculty participating in the Resource Bank will also be invited to attend our “Reflection Fridays” and three additional “mini-retreats” over the coming year to ensure an ongoing exchange of ideas. * We plan to video-capture math classes when students are working in groups on the resource bank activities. These video captures will be an excellent conversation prompt for our Reflection Fridays over the coming year, and other colleges in the project have expressed interest in them as well. |
| How are you including structured faculty inquiry in your project? | * Structured faculty inquiry occurs through “Reflection Fridays” and faculty retreats, where math faculty will get together to exchange ideas, seek advice, share assessment results, fine-tune the curriculum, etc. At the math faculty retreat in summer 2011, we will consolidate our results and reflections from the 2010 -11 academic year and review our direction for the 2011-12 academic year. * After our summer 2010 inter-disciplinary retreat, a proposal that the conversation should continue throughout the year received overwhelming support. We have proposed to amend the original project budget to include three Friday evening/Saturday morning “mini-retreats”, one per quarter to continue this work. * A Faculty Inquiry Group will continue to investigate teaching for understanding and formative assessment and the resources available on “Problem-Based Learning” and “Teaching for Understanding.” One of our team members will attend the National Center for Post Secondary Research Developmental Education Conference in New York in September. * Most math faculty will attend the annual Washington State Community College Math Conference, and some faculty may attend the College Readiness retreats at Rainbow Lodge. * We are also seeking to invite an expert to come to our campus and present a workshop on “Teaching for Understanding,” which we would open to math instructors from other community colleges. Disseminating the lessons learned from these investigations will be a key part of our project. |
| How are you addressing the area of targeting interventions to “improve student engagement” and “deepen mathematical understanding” in the work you are pursuing? | * First is through our learning resource bank containing contextually based activities and the common core pretests and final exams. Because of summer conversations, we will expand the one concept/one activity model to include a thematic approach to multiple concepts. This will reduce the amount of class time needed to establish the contextual base of the application, and increase the time spent on what is needed: teaching the math concepts, conducting timely, formative assessment of student learning, analyzing the results of those assessments, and using information from that analysis to improve practice. * Second is with the 2-credit supplemental instruction linked to our Beg Algebra II course in winter quarter. The challenge is that this class has never been taught at the pre-college level before. However, the faculty scheduled to teach this class is working with our team to brainstorm different supplemental instruction ideas. * Third is with the culmination of our year-long cohort with a coordinated studies course that integrates Intermediate Algebra with Environmental Science. Through the blending of science and math, we hope that environmental science will serve as a platform for students to be engaged in math and science and hence deepen their mathematical understanding. |
| **North Seattle Community College - Challenges & Obstacles** | |
| What challenges or obstacles have you encountered so far in organizing your team and the work of your project, and how are you addressing them? | * Assessment is an area of difficulty for most of the faculty, which is why we focused on it during one of our first retreats. It is going to take a concerted effort from the math faculty over the remainder of the summer break to put the Beg Algebra I resources in place for fall quarter. * At the retreat, some faculty members questioned incorporating formative assessments and the new learning resource bank activities into their classes when they feel they have no more time to spare. We are addressing this challenge by articulating our core curriculum and mapping the 33-week Beg and Intermediate Algebra topics to eliminate unnecessary overlaps. * All math department faculty have agreed to adhere to this reduced set of core competencies, with the understanding that faculty can cover additional topics as time allows. * The common course assessments, both pretests and final exams, will focus exclusively on students’ understanding of the core competencies. Math faculty disagreed on the importance of teaching certain topics, which take a large portion of the teaching time, at precollege level. * Although there was agreement to leave these disputed topics in the core curriculum, in the coming year some faculty will experiment with de-emphasizing these topics and putting additional time into other areas with more immediate relevance to students’ lives. |
| What challenges do you anticipate in the core themes or practices and how can the RPM project leadership help you address those challenges? | * One challenge is that all faculty, may not understand what formative assessment and therefore may not see its value in assisting them to be reflective about their practice and ways to improve it. * This project has put some strategies in place to address these challenges: developing common first- and last-day assessments, using video to “capture” the process of student learning and “slow it down” in order to better understand it, and scheduling regular “Reflection Fridays” for faculty to focus discussion on these issues. * Yet, as noted earlier, a challenge we anticipate for these reflection times is “making sure faculty are focused on the task at hand to make the best use of the time.” This leads to two concrete ideas about how RPM leadership might help in addressing the challenges. * Perhaps leadership could provide “focus questions” for all projects to address and report on at regular intervals. Such questions could be structured around the core project themes. Further, if Emily and Gillies developed some protocols around how best to structure the discussions around the questions that would be an added bonus. * Project Leadership (Bill Moore) has expressed an interest in using the “video-capture” technology developed by NSCC faculty Tom Drummond and Kalyn Owens to the advantage of the entire RPM project. This is encouraging, and would be very helpful to our project. * Having project leadership endorsing such an approach and demonstrating how to use it to advance the core themes of this project would add credibility and structure to our local efforts to use video capture effectively. |
|  | **North Seattle Community College - Communication** |
| What kind of web based resources would be most helpful to you and your team, and how will you create opportunities or structures to access and utilize the resources you need? | * The most useful web resource on the RPM Wiki thus far has been the Problem-Based Learning Resources. Additional resources on “Teaching for Understanding” would be very helpful. * The math faculty involved in the project will be meeting twice monthly during the 2010-11 academic year. During these meetings we will be discussing the core competencies in each precollege course, and the teaching practices that will make the most substantial impact on student success in achieving these competencies. Faculty will prepare for discussions by reading selected articles. The resources provided on the RPM Wiki will be one source of these readings. * A web site is being established for our project and is under construction this summer. This will be a repository of all materials created for the grant, assessment data, and links to articles or web sites helpful in teaching and assessment. |
| What connections have you made with other RPM grant sites either at any of the RPM events or at other times to share resources, raise questions, compare ideas, etc.? What suggestions do you have for us to help foster this kind of cross-team collaboration? | * We met with faculty from other teams at the Cedarbrook Spring retreat, and have had informal e-mail contact with some members of other teams. * We have met with math faculty from Everett Community College and SBCTC personnel around the idea of videotaping students engaged in math group work. We plan to continue the conversations in the future as both colleges use this technology to document, “freezeframe,” and deeply examine student learning. |

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| **Clark College - Activities in Phase I** | |
| Describe what your team will have accomplished toward the overall goals of your project? | * The core team has conducted numerous planning sessions. We compiled data on the current Washington College Readiness Mathematics Standards and associated student learning outcomes covered in the following pre-college math courses: ABE 024, DVED 021, DVED 023, Math 030, Math 090, and Math 095. * The Clark RPM team has identified 5 Through-lines:   1) Proportionate Relationships and Reasoning using Proportionate Relationships:  2) Quantitative Relationships involving two or more quantities (variables).  3) The Meaning of Mathematical Symbols  4) Creating Algebraic Equivalence  5) Number sense   * After the through-lines have been identified work has begun on developing sample teaching tools for each area and developing a set of appropriate assessment tools for each concept at each of the levels of the pre-college math curriculum. |
| How are you incorporating the practice of classroom observations or exchanges and classroom assessments into your project? | * Classroom observations and teaching exchanges were not part of our original proposal and we still do not have a clear vision of how this will fit within our plan. * The instructors assigned to teach pre-college math at Clark College are 60 – 70% adjunct. While classroom exchanges may be manageable with a smaller program of predominantly full-time it creates a major challenge for us since adjuncts do not spend the full day on campus * Classroom assessments were part of our original proposal, included in fifth task of the project. This is an extension of our work on the College Readiness Mathematics Standards and the through line concepts. The team has already begun looking at existing surveys and questions to be administered to as many students in as many courses as possible. * We plan to administer preliminary student surveys fall term to gage the level of student engagement currently taking place in the pre-college math courses. Work has also begun on developing short, 2-4 question, 10 minute assessments that can be imbedded in numerous courses across the curriculum. * We will be working on creating the faculty buy-in necessary to accomplish this by hosting additional RPM informational gatherings starting with manning an information table at the fall orientation fair in September and planning additional Open House gatherings similar to the one we held in May. |
| How are you including structured faculty inquiry in your project? | * The through-lines and linkages to the student learning outcomes are the focus of our project work and planning at this time. We believe FIGs will provide opportunity for identifying and sharing of Best Practices, mini-lessons, and assessments. * During Phase I we prioritized our activities around researching and identifying the through-line concepts so that we can move forward drawing in more faculty and impacting students in * Phase II and Phase III of the project. * Structured faculty inquiry will be used to focus our efforts on investigating the effects of specific practices, lessons and assessments. * Structured faculty inquiry will be supported by online resources. We have developed a wiki-space to compile and share information among team members and with a wider audience within all three departments involved in the pre-college math sequence. * We intend to have a number of FIGs structured across programs focusing on specific through-line concepts sharing best practices appropriate to specific levels of instruction. * In addition to the FIGs we plan to host quarterly professional development activities based on these areas. * The major challenge we face is the size of our college. We need to be able to introduce changes in pedagogy that are consistent and understandable to faculty, administration and the supporting services at the school. It will be important to keep the scope of our activities reduced to a manageable level during the initiation period so we can allow time to engage and involve the faculty in a meaningful way. |
| How are you addressing the area of targeting interventions to “improve student engagement” and “deepen mathematical understanding” in the work you are pursuing? | * We are working on creating and compiling rich lessons with complex problems where the concept of scaffolding can be applied to make the lesson appropriate for the various precollege math courses. Additional activities such as applied projects and short, intensive exercises that reinforce procedural competence may be introduced. * Improving student retention and success is crucial, current success rates are not acceptable. * We want to determine where students encounter difficulty in the pre-college math sequence. * If a particular part of this sequence is identified, we will consider possible interventions that could increase success rates in this area. There is frustration and unhappiness amongst the faculty with the poor success rates. |
| **Clark College - Challenges & Obstacles** | |
| What challenges or obstacles have you encountered so far in organizing your team and the work of your project, and how are you addressing them? | * Time commitments are a challenge. Work sessions scheduled throughout the summer allowed the team to get a significant amount of work accomplished on the initial activities outlined in our proposal. * Coordinating project meetings with teaching schedules was a challenge during spring quarter and will be in the fall as well. Pre-college math at Clark College spans three departments, two campus locations: and three different Deans. During the coming academic year we have designated a project lead who will have a reduced teaching load and will be able to focus a portion of his time on grant work and better coordinate the team’s activities. We have also identified person who will provide the clerical support to the project. * The RPM team is very enthusiastic and new ideas are being brought forward at every meeting. To overcome the obstacles, we have closely monitored our expenditures and worked as a group to prioritize the tasks to be accomplished during Phase I. By focusing our summer efforts on the five primary tasks outlined in our original proposal made subsequent meetings much more productive and gave a sense of direction. During Phase II we will be including two additional tasks: exploration of a fast-track math pilot, and collaboration with ESD 112. * Our team lead will help coordinate overall activities with individual team members assigned to specific tasks. |
| What challenges do you anticipate in the core themes or practices and how can the RPM project leadership help you address those challenges? | * Our challenges to this work are that we need to be able to introduce changes in pedagogy that are consistent and understandable to faculty, administration and the supporting services at the school. Simply developing new activities designed to engage will not ensure effective implementation within the classroom. * Another challenge is to get a significant number of faculty involved in both the project and the classroom implementation. * A final challenge is to maintain the administrative backing necessary to empower faculty members to apply new teaching and assessment activities within their courses. |
| **Clark College - Communication** | |
| What kind of web based resources would be most helpful to you and your team, and how will you create opportunities or structures to access and utilize the resources you need? | * The Clark College RPM team has developed a wiki-space and participated in wiki training. * Members of our team have accessed multiple resources provided on the TMP and RPM web sites. * The discussion tool on the Wiki does not seem to be effectively engaging faculty across the project. * We would like to see additional research articles and data on student success across the state. |
| What connections have you made with other RPM grant sites either at any of the RPM events or at other times to share resources, raise questions, compare ideas, etc.? What suggestions do you have for us to help foster this kind of cross-team collaboration? | * The team hopes to make connections at the summer gathering that will lead to shared resources and collaboration. We feel fairly isolated from the other community colleges here in Vancouver. We are talking with WSUV and ESD 112 outside of the RPM grant. * Cross-team collaboration will be much easier once it is obvious what the various schools are planning. It would be helpful for someone with a broader perspective to point out the common themes and facilitate the communication between teams. * Perhaps specific FIG’s can be developed including representatives across teams who are working on common elements of the project, assessment, surveys, etc. * Our team could benefit from webinars on topics related to pre-college math assessment, active student learning, retention, etc. Perhaps someone at the state level could watch for and publicize appropriate webinars for people participating in this grant. The webinars could then be followed up with open discussions held on Elluminate. |

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| **Spokane Falls Community College - Activities in Phase I** | |
| Describe what your team will have accomplished toward the overall goals of your project? | * We designed, developed and distributed a survey for students enrolled in the MLC. The survey was designed with the help of a faculty member with an expertise in statistics. We collected the data over a three week period; approximately 50% of the students enrolled in MLC completed the survey. Groups of math faculty are investigating curricula for the MLC this summer. They are using the guidelines of how well it aligns with our revised and the CRS. * We developed a one day training session for new faculty to the program. This training was attended by all who will be teaching the new sequence at our remote sites. They were provided with an overview of our new curriculum, college readiness tools and methods for implementing technology. * A faculty member completed an instructor’s guide for our custom designed book for our developmental sequence. This instructor’s guide will use insights from our weekly meetings last year. * We developed an end of course task for Math 98. The task was designed to measure how well students understood multiple representations of functions. The task was designed and reviewed by project team members and piloted in two of the four sections of Math 98. We plan to use the data from these assessments as starting points for discussion in our faculty inquiry groups in thefall. * We plan to take our weekly meetings and convert these to faculty inquiry groups. The focus of these groups so far has been on the content changes in the new curriculum and we want to now focus more on instructional practices. The SFCC math department has developed a math book club. Our first selection was the introductory chapter of the book How Students Learn Mathematics in the Classroom. This served as a good introduction to how faculty inquiry might work. Three faculty members involved in the project committed to completing at least one Classroom Assessment Technique (CAT) this past spring quarter. They each attempted a targeted intervention based on the results of the CAT. |
| How are you incorporating the practice of classroom observations or exchanges and classroom assessments into your project? | * We are asking all instructors in our new developmental sequence to commit to the following actions each quarter: * One classroom observation/exchange with another instructor teaching the same course. * Distribute a common “task” in their developmental math course that will focus on one key understanding in the course and participate in the process of evaluating the data from this task. * Use a set of common final questions that will be given in each course and participate in the discussion of aggregate data from these questions. * Try at least one classroom assessment technique in their course using the CAT Handbook as a guide. * We have tried to maintain that all data gathered will be analyzed in aggregate and not by individual faculty member. The purpose of the data gathering is to ascertain what our students know with confidence and what aspects they are not as comfortable with. The idea is that this will lead to rich discussions of content and instructional practice in our inquiry groups. * We need to establish protocols for classroom observation that focuses on improvement instead of evaluation. If there is reluctance to classroom observation we will pilot the observation process during the fall quarter with volunteers in each course group. |
| How are you including structured faculty inquiry in your project? | * The easiest transition is to use our current structure of weekly meetings and transition these to structured inquiry groups. To transition the focus of these groups to instructional approaches and student understanding we will do the following: * Prior to the beginning of the fall quarter during our planning days we will have a developmental math refresh meeting. This meeting will introduce math faculty to the inquiry group process and the required course assessments. * We will have a math faculty retreat during the fall quarter. During the retreat we will model the evaluation process using the data we gathered from the Math 98 task we gave last spring and show how this can lead to analysis of student understanding. * There seems to be an interest in looking at the issue of pre-class preparation and college readiness of our students. * There is an interest in continuing the math book club and using our readings to give us ideas on addressing student misunderstanding and targeted student interventions. |
| How are you addressing the area of targeting interventions to “improve student engagement” and “deepen mathematical understanding” in the work you are pursuing? | * We will use CATS, student data from our common course tasks and common final questions. In addition, we currently ask instructors in each of these courses to submit their tests to a course librarian. These tests are placed on a shared drive and are a common test bank for each course. We hope to use our consultants in project development and assessment to help us design tasks that yield fruitful data and teach us a process in which to take this data and use it to identify student understandings/misunderstandings. * The main focus of our discussion in inquiry groups will be on our instructional practices to improve student engagement and to address these areas of student misunderstanding. * One technique that has generated some initial interest is a lesson study. If we use the data we have collected to identify a key misunderstanding we could use our time during inquiry group to develop a targeted lesson that addresses this area. All faculty involved in the inquiry group could teach this lesson and evaluate results. |
| **Spokane Falls Community College - Challenges & Obstacles** | |
| What challenges or obstacles have you encountered so far in organizing your team and the work of your project, and how are you addressing them? | * We made a commitment to expand our leadership team to include faculty who have spent more than 5 years at SFCC and additional adjunct faculty. * Three adjunct faculty are attending the summer meeting with the idea they would help lead one aspect of the project. In addition we have invited two full time faculty who have been at SFCC for over 20 years to take on a leadership aspect of the project. * Another major challenge has been implementing our evaluation plan for our project. We had hoped to hire a single outside consultant that would help us design an assessment plan and teach us how to implement it. * We have begun a process of developing contracts with some university faculty in Spokane to help us develop and evaluate assessments that measure student understanding. We would also like direction from these consultants on how to design and implement a process to effectively gather data from these assessments. Due to workload issues these consultants were not able to begin their work with us last spring but will begin working with us this October. Another aspect of our evaluation plan was the use of focus groups to evaluate student attitudes towards our new program and how well our college readiness component is working. We are in the process of hiring a separate consultant to do this work for us. |
| What challenges do you anticipate in the core themes or practices and how can the RPM project leadership help you address those challenges? | * RPM leadership can help us address these challenges we offer the following few suggestions. First of all we believe that providing some protocols that we can use in classroom observation would be helpful. There are some on the wiki, but additional possibilities and how to implement these in a professional manner would help. * We believe that time to brainstorm with other colleges that have pre college math courses taught at various sites and how they incorporate these instructors in the inquiry group process would be useful for us. * Additionally we need some more training and discussion on ways to react to classroom assessments like CATS. In particular what targeted student interventions are the most useful? |
| **Spokane Falls Community College - Communication** | |
| What kind of web based resources would be most helpful to you and your team, and how will you create opportunities or structures to access and utilize the resources you need? | * The resources provided on the wiki were valuable as a starting point in our development but more resources of problems that we can develop into performance tasks for our students would be very useful. * As we develop performance tasks for Math 93, 94 and 98 we can add these resources to the wiki and would be very willing to do so. * We will continue to use the wiki as a first stop in our search for good problems to develop into rich performance tasks for all three of these courses. * One area of need for our team is resources on classroom observation. Particularly helpful would be classroom observation forms used by other campuses or groups do not focus solely on evaluation. * We would like more resources and information on how other colleges have adopted the strategy for professional learning approach especially in the field of precollege mathematics. |
| What connections have you made with other RPM grant sites either at any of the RPM events or at other times to share resources, raise questions, compare ideas, etc.? What suggestions do you have for us to help foster this kind of cross-team collaboration? | * Outside of the one scheduled meeting that we had last spring we have not had much contact with other RPM sites. We believe that the wiki can be a valuable resource to allow us to communicate, but our college team is inexperienced in the use of a wiki and we are still learning how to use this resource effectively. * Another way for us to foster collaboration is some targeted time where we share some commonalities in our different projects. For example, we have noticed that some of the colleges are considering a modular approach to topics in their precollege math courses. In addition we are sure some of the larger urban colleges (or Northwest Indian College) has more experience with faculty at remote sites and how to insure they are included in the process. It would be fruitful for us to have time to brainstorm solutions to these common problems. * We also would like to specifically partner with colleges that are developing performance tasks to see if our shared results can lead to any conclusions concerning student understanding. |

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| **Highline Community College - Activities in Phase I** | |
| Describe what your team will have accomplished toward the overall goals of your project? | * Piloted the redesigned curriculum at the Math 81 level in spring quarter of 2010 * Beginning in summer of 2010, all sections of Math 81 and 91 were converted to the redesigned curriculum, taught both by full- and part-time instructors * Held a 3-day workshop on July 19, 20, and 21, to bring together full- and part-time faculty   who will be teaching the new curriculum in fall quarter of 2010   * Collected retention and success rate information and also   conducted student satisfaction surveys. Compared data against baseline data and  presented to the faculty in early summer quarter, 2010 |
| How are you incorporating the practice of classroom observations or exchanges and classroom assessments into your project? | * Diana Lee (math faculty) conducted classroom observations of all sections of the spring-quarter pilot, with a focus on observing levels of student engagement |
| How are you including structured faculty inquiry in your project? | * Met weekly in an inquiry group to discuss new courses. Discussed of the following: handouts and assignments created by the faculty, instructional approaches and rationale, student responses to those approaches, and data on student achievement. * Informal inquiry groups are in place, with the Math 91 group   focused on helping faculty understand the new curriculum as well as developing a habit of  sharing materials and data via email. |
| How are you addressing the area of targeting interventions to “improve student engagement” and “deepen mathematical understanding” in the work you are pursuing? | * Implemented student reflection strategies: required students to keep a notebook in which they   recorded their attendance as well as completion of assignments. Implemented a “weekend  applications” assignments asking students to apply concepts and techniques to familiarcontexts (cooking, home improvement, finances, etc.) or seek additional information relatedto in-class activities (e.g. finding recipes to triple or halve, checking prices of truck rentals).   * During the 2010 summer workshop, instructors shared classroom activities designed to deepen   student engagement |
| **Highline Community College - Challenges & Obstacles** | |
| What challenges or obstacles have you encountered so far in organizing your team and the work of your project, and how are you addressing them? | * Struggling with how to collect data from students who dropped the class, or with how to bring the student voice more into this project. * Reduced level of faculty engagement in the summer Math 91 inquiry group. A similar drop in participation appeared during the three-day training workshop held for faculty |
| What challenges do you anticipate in the core themes or practices and how can the RPM project leadership help you address those challenges? | * There is some concern expressed about securing student consent and protecting identity in the case of videotaping. Missing a clear rationale and clear protocol for videotaping, we may have difficulty securing IRB approval * A second challenge involves helping faculty accept faculty inquiry as part of their role, then   making faculty inquiry productive   * Increasing faculty members’ willingness to volunteer information without solicitation * Translating successful teaching strategies from one instructor to another |
| **Highline Community College - Communication** | |
| What kind of web based resources would be most helpful to you and your team, and how will you create opportunities or structures to access and utilize the resources you need? | * We suggest the following resources be included on the project wiki: (1) Case studies of other   institutions engaged in significant curriculum redesign, (2) Part-time practices that promote  faculty engagement, (3) Protocols for faculty inquiry, (4) Protocols for classroom observation.  When possible, videos (for example TED videos) are helpful because they’re easily accessible. |
| What connections have you made with other RPM grant sites either at any of the RPM events or at other times to share resources, raise questions, compare ideas, etc.? What suggestions do you have for us to help foster this kind of cross-team collaboration? | * Helen Burn was contacted by Carren Walker from Clark regarding alternative algebra courses. Helen also gave a workshop on the Student Attributes to the high school math conference facilitated by Peg Balachowski as part of Everett’s grant. Diana Lee has been contacted by Shoreline and South Puget Sound CC for copies of her quick guide to study skills (week by week). Though these colleges are not part of the grant, it does suggest to us that our work on the student attributes may be useful to other grantees. * Suggests holding a mid-year RPM event. * Offer a session on RPM at the Washington State Math Conference |